REMARKS

Applicants have carefully reviewed and considered the Examiner's Office Action dated January 23, 2006 Reconsideration is respectfully requested in view of the following comments.

By this Amendment, claims 23, 29 and 30 are amended to clarify the meaning of the recited structure. Accordingly, Claims 23-31 are pending in this application.

Claims 23, 29 and 30 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for the reasons set forth in paragraph 1 of the Action. By the foregoing amendments to the claims, the objected to phrases are replaced with language from the originally-filed specification that clarifies the objected to phrase.

In particular, the amended portion of claim 23 is supported by the description at page 55, line 5 to page 56, line 13 of the original specification. The positive and negative dielectric constant anisotropy are defined at page 28, lines 1-7 of the original specification. Figure 22 of the present application discloses two frequencies: f31, similar to f11, having a positive dielectric constant anisotropy; and f32, similar to f12, having a negative dielectric constant anisotropy. The term "an amplitude of an AC voltage" in line 9 of claim 23 refers to a variation of voltage according to a frequency of an AC signal.

With respect to claim 29, the amended portion is supported by Figure 20 and the description at page 52, lines 17-25 of the original specification.

Claim 30 has been amended to recite "a light is incident from the side of the alignment layer formed under the variable refractive index material so as to match the polarized condition of the incident light with the direction of orientation of the alignment

layer." This is supported by the description from page 51, line 13 to page 52, line 7 of the originally-filed specification. It is submitted that claims 23, 29 and 30 are fully definite under 35 U.S.C. §112, second paragraph and withdrawal of this rejection is respectfully requested.

Claims 23, 25-28 and 30 were rejected under 35 U.S.C. §102 (b) as being anticipated by U.S. Patent No. 5,299,037 to Sakata as explained in paragraph 3 spanning pages 3-4 of the Action. In as much as this rejection still applies to the amended claims, this rejection is respectfully traversed.

Sakata is directed to a diffraction grating type liquid crystal display device in a viewfinder. It is the Examiner's position that the recited "driving means" of claim 23 is "inherent in order to apply an electric field or voltage across the transparent electrodes 3" based on the disclosure of Sakata. However, the "driving means" of the present invention varies the orientation of the liquid crystal molecules of the variable refractive index material according to the applied amplitude of an AC voltage. For example, the longer axes of the molecules are aligned along the electric field when applying a larger amplitude of the AC voltage, as in frequency f31 of Fig. 22 of the present invention; and the longer axes of the molecules are aligned perpendicularly to the electric field when applying a smaller amplitude of the AC voltage, as in frequency f32 of Fig. 22. As stated above, the term "amplitude of an AC voltage" means "a variation of a voltage according to a frequency of an AC signal".

In contrast, Sakata discloses a liquid crystal display device where the orientation of the molecules is determined based on the type of variable refractive index material (i.e., negative or positive dielectric anisotropy). The electric field that drives the display

element of Sakata is not disclosed, as recognized by the Examiner. Accordingly, it is submitted that Sakata do not "inherently" disclose the recited driving means of claim 23 because nowhere does Sakata disclose the orientation of the liquid crystal device being based on a varied amount of voltage. To the contrary, Sakata teaches a static arrangement in that the liquid crystal is not disclosed as being varied when the electric field is applied. Consequently, Sakata fails to discloses each and every feature recited in claims 23, 25-28 and 30. Thus, Sakata cannot anticipate these claims and withdrawal of this rejection is respectfully requested.

Sakata discloses varying the orientation in one manner by turning ON or OFF the electrical field. Nowhere does Sakata disclose a liquid crystal device of a variable refractive index where the liquid crystal is always moving as far as the effective value of the AC voltage maintains a predetermined constant value. Thus, the claimed invention varies as a result of the amplitude or frequency of the AC voltage applied to the electrodes. Nowhere does Sakata disclose or even suggest such an optical device.

Claims 24 and 31 were rejected as being unpatentable under 35 U.S.C. § 103(a) over Sakata in view of U.S. Patent No. 5,047,847 to Toda et al. (hereinafter referred to as "Toda") for the reasons set forth in paragraph 4 of the Action. This rejection is respectfully traversed.

As the Action acknowledges, Sakata fails to disclose, teach or suggest "driving the two transparent electrodes in an AC manner." However, it is the Examiner's position that the secondary reference to Toda teaches a liquid crystal lens which responds differently to different frequencies. Column 6, lines 31-45 of Toda discloses two different nematic liquid crystals A and B, which may be controlled by a common driving

signal. That is, liquid crystal A responds to a particular frequency while liquid crystal B responds to a different frequency. Toda discloses that the frequency response of liquid crystal B when in the homeotropic arrangement does not vary much in column 6, lines 61-63. Likewise, the liquid crystal A is disclosed as not substantially varying at a frequency below an above mentioned frequency when in the homeotropic state. Nowhere does Toda disclose that the orientation of the molecules varies as a result of the frequency applied to the electrodes, as set forth in independent claim 23. Accordingly, Toda, like Sakata, teaches or suggests a static arrangement where an AC voltage is applied to turn ON a liquid crystal, but not an arrangement where a varying amplitude of the AC voltage varies the molecular orientation of the variable refractive index. Consequently, Toda also fails to disclose, teach or suggest the driving means recited in independent claim 23, from which claims 24 and 31 depend and withdrawal of that rejection is respectfully requested.

In view of the foregoing comments distinguishing the claimed invention from the prior art of record, it is believed that claims 23 - 31 are allowable over the prior art of record and Applicants request withdrawal of the above rejections. Accordingly, it is respectfully requested that a Notice of Allowance be issued indicating that claims 23 - 31 are allowed over the prior art of record.

Should the Examiner believe that a conference would advance the prosecution of this application, the Examiner is encouraged to telephone the undersigned counsel to arrange such a conference.

Respectfully submitted,

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